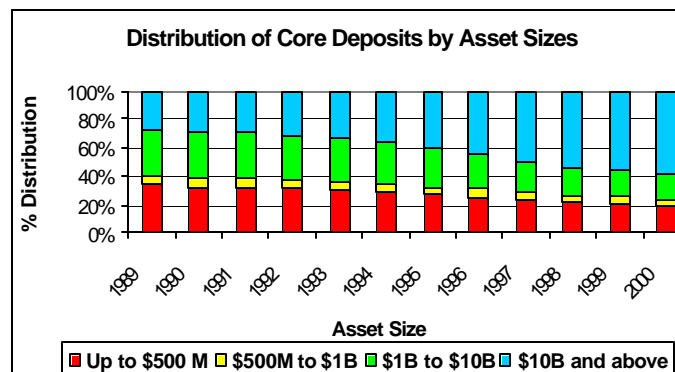


Sound Liquidity Risk Management Practices in Community Banks¹

Funding growth through core deposits is largely a thing of the past. The advent of non-bank competition and the rise of third party funding means that community banks now operate in a dynamic funding market, which requires the use of more sophisticated liquidity risk management practices. Until the mid-1980's, most community banks funded growth primarily through core deposits. These deposits were federally insured, stable, relatively cheap, and rates paid on deposits did not fluctuate a great deal in relation to changes in general interest rates. Many seasoned bankers still fondly recall this era as the "good old days" in funding. Industry experts point to many different underlying causes for its demise such as the increased financial sophistication of the public, demographic shifts, the rise of non-bank competitors offering a whole wave of alternative investment products, new delivery systems such as the Internet, competition from credit unions and insurance companies. Here we have an interesting paradox. Community bankers have been complaining for years that their core deposit funding base has been eroding. How is this possible when call report data indicates that core deposits for the banking system have been increasing? A study of call report data indicates that while core deposits have been increasing in the banking system as a whole over the past decade, they have been flowing out of the community banks and into the regional and money center institutions as shown in the chart below.²



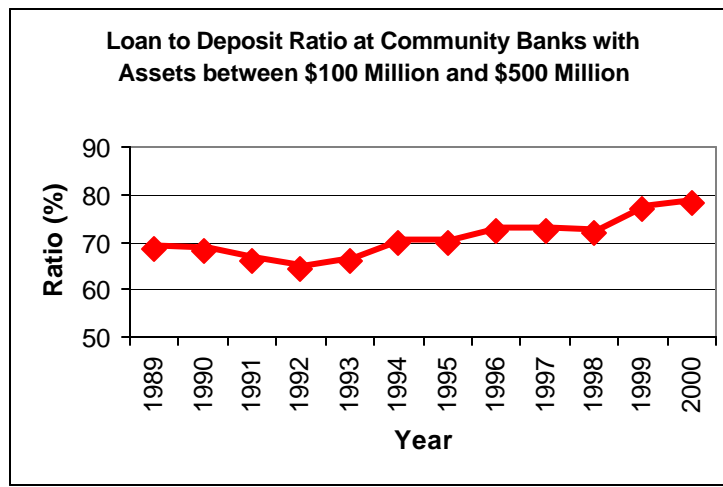
Source: Call Reports for community banks excluding de novos

While the decline in the traditional means to support those loans, core deposits, has adversely impacted liquidity, the greatest impact on community bank liquidity in the last decade has been the unparalleled surge in loan demand. This combination of increasing loan demand and decreasing core deposits has pushed benchmark ratios to historic highs. Perhaps the best indication of the impact of this combination of market factors has had on bank liquidity is shown by the loan to deposit ratio which has increased approximately

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² Bank consolidation has no doubt had an impact this trend; however, the precise impact is beyond the scope of this article.

10 percent in the past decade as shown in the following graph.



Source: Call Reports for community banks excluding de novos

The combination of all these trends has forced community banks to become increasingly sophisticated in their liquidity risk management practices. Few community banks today can meet their funding needs entirely with core deposits. To fund loan growth, community banks are increasingly turning to alternative funding sources such as brokered deposits, Federal Home Loan Bank loans, and purchased fed funds to meet their needs. Unfortunately, third party funding sources can be significantly more expensive. This places additional pressure on interest margins, increases volatility, heightens overall liquidity risk, and requires the adoption of a new set of liquidity management guidelines. Of these third party funding sources, FHLB borrowings are clearly the most important third party funding source. At the end of 1992, few commercial banks had taken advantage of their newly acquired access to FHLB membership under FIRREA. As a result, only 4.6 percent of commercial banks had any FHLB borrowings; these advances provided only 0.2 percent of commercial banks' funding. By the first quarter of 2001, 45 percent of commercial banks had FHLB advances, which supplied 2.9 percent of the industry's funding.³

Clearly the higher levels of third party funding are rapidly forcing bankers to become masters at managing both sides of the balance sheet. Until the mid 80's, the largely stable deposit base enabled community bankers to manage liquidity almost exclusively from the asset side of the balance sheet. Banks had large securities portfolios, which they relied upon to provide secondary liquidity and during periods of high loan demand would simply cut off lending until deposit growth caught up. Today, the availability of liability side funding options and margin pressures has resulted in many banks placing less reliance on the securities portfolio as their secondary source of liquidity. They are liquidating securities to fund loan growth, and increasing the proportion of higher

³ Testimony of Donna Tanoue, Chairman, Federal Deposit Insurance Corporation. Condition of the Banking and Thrift Industries. Before the Committee on Banking, Housing, and Urban Affairs. United States Senate, June 20, 2001.

yielding, higher-risk securities in their portfolios in order to offset increased funding costs. While this trend has helped limit the erosion of profitability, these smaller portfolios, some as low as 7 percent of total assets, provide much less secondary liquidity. In addition, these trends are compounded by the fact that many banks are taking on additional interest rate risk by lengthening the maturity of their portfolio, which could expose them to significant depreciation in a rising rate environment. Finally, many community banks are using increasingly large portions of their securities portfolios for pledging purposes, which further diminishes their value as a source of secondary liquidity. Shutting off lending is seldom a viable option today due to competitive pressures and the availability of third party funding. Today, the majority of asset side liquidity management entails securitization of the loan book as well as loan sales programs. On the liability side of the balance sheet, large certificate of deposit programs, brokered deposits, and bank note programs have been instituted to supplement traditional fed funds purchases and repurchase agreement programs. Plans are well advanced at some community banks to employ a new funding source - Internet third party quote sites that will advertise their savings and CD rates nationwide.

What are the implications of these trends for liquidity risk management? Simply that in today's business environment, the increased sophistication of liquidity management techniques must be matched by a heightened ability to assess the adequacy of the bank's liquidity risk control policies given its funding profile. No liquidity risk management strategy will be successful unless the five pillars of sound liquidity risk management are in place:

- **A well defined funding strategy**

Bank management, generally through ALCO, must articulate the overall strategic direction of the bank's funding strategy by determining what mix of assets and liabilities will be utilized to maintain liquidity. This strategy should address the inherent liquidity risks generated by the institution's core businesses.

- **Effective metrics and monitoring**

Most banking experts agree that maintaining an appropriate system of metrics is the lynch pin upon which the liquidity risk management framework rests. Management needs a set of metrics with limits and benchmarks to quickly ascertain the bank's true liquidity position, ascertain trends as they develop, and provide the basis for projecting possible funding scenarios rapidly and accurately, in order to successfully manage their liquidity position. Good metrics mean nothing unless management is able to track and evaluate their bank's current and anticipated liquidity position and capacity through a monitoring system. A monitoring system enables management to monitor and confirm that it is operating within approved funding targets and, if not, to pinpoint the variances. The most successful banks create objective targets for each liquidity measure, which often have multi-level trigger points in order to maximize their liquidity position.

- **Adequate MIS**

An adequate and flexible MIS system capable of delivering accurate funding information to management on a timely basis must also be in place. While most banks "ratchet

down” their systems during periods of normal funding, the system should be capable of providing increased levels of detail more rapidly during periods of funding stress to ensure that management has an adequate information flow upon which to base its funding decisions.

- **Strong internal controls**

Liquidity risk management must be supported by strong internal controls. There should be a strong internal or external audit program in place to verify that funding exposure limits from both single sources and aggregate sources have been diligently monitored.

- **A sound contingency funding plan**

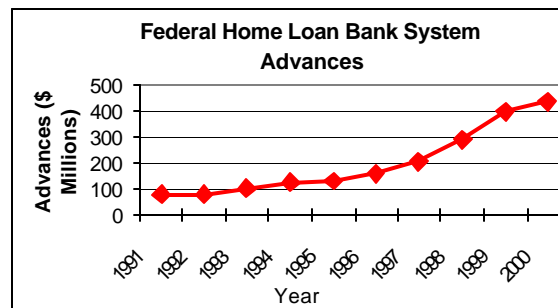
Banks should have a formal contingency plan of policies and procedures to use as a blueprint in the event the bank is unable to fund some or all of its activities in a timely manner and at a reasonable cost. Industry experts generally agree that these liquidity crises tend to develop very rapidly. A comprehensive contingency funding plan can provide a useful framework for meeting both temporary and long-range liquidity disruptions. A good plan should emphasize a reliable but flexible administrative structure, realistic action plans, on going communications at all levels, and a set of metrics backed by adequate management information systems.

Lessons Learned and Best Practices

Bankers frequently ask examiners for lessons learned or best practices in liquidity risk management. The most important points the author feels community bankers should understand are these:

- Community banks operate in a dynamic funding market. As a result, both the bank’s balance sheet and market access trends should be periodically evaluated for emerging patterns that could adversely impact liquidity and develop strategies to manage these trends. Bank funding requirements should be reviewed at regular intervals by an analysis of the behavior of cash flows on both the asset and liability sides of the balance sheet, *as well as* off balance sheet items. Experience indicates that all too frequently off balance sheet funding requirements (generally loan commitments) are either not incorporated into these periodic cash flow analyses or that they are merely an informed guess.
- Bankers must be able to identify, monitor, and control funding concentrations. Fundamental changes in the funding structure of many community banks have resulted in significantly increased funding concentrations. As a result, it is important for bank management to ensure that funding concentrations are properly identified, monitored, and controlled (firm limits set on their size). To minimize funding concentrations, many community bankers are spending significant amounts of time and effort in developing new marketing plans designed to diversify their funding sources with a particular emphasis on developing new sources of core deposits.

- It is not uncommon to study a bank's funding pattern and discern an almost one for one replacement of FHLB borrowings for lost core deposits. FHLB borrowings enable community bankers to borrow at near money center bank rates, are quickly and easily obtained, and are available with maturities ranging out to 10 years. As a result, FHLB borrowings have enjoyed phenomenal growth in the past decade. There are twenty-one active lending products offered by the FHLB, which fall into three broad categories: fixed rate, convertible rate, and open line. The fixed rate advance is the most popular followed by convertible rate products. Commercial banks with FHLB advances have jumped from almost none of the \$79 billion in FHLB advances made during 1991 to accounting for a substantial portion of the \$438 billion in advances at the end of 2000 as shown in the graph below.



Source: Federal Home Loan Banks Summary of Financial Data, December 31, 2000

Fixed rate FHLB advances pose little liquidity risk because there is no optionality inherent in these advances since the term and the rate are fixed. Convertible FHLB borrowings *can* pose significant liquidity risk in a changing rate environment since its terms enable the FHLB, after a stated fixed rate lock out period, to convert the loan to a current market rate for the remaining term of the loan. As a rule of thumb, a general rise in interest rates will result in an upward rate adjustment.⁴ When properly used convertible borrowings can provide lower than market funding costs. Unfortunately, all too often we find bankers utilizing convertible borrowings because they were attracted to the rates and are unaware of the level of liquidity risk they are assuming because they failed to perform a detailed funding and interest rate risk analysis. It is absolutely essential that bank management fully understand the risk characteristics of the advances they are using, especially if the bank is utilizing advances with callable or convertible characteristics. It is considered a best practice for management to run or have an independent third party run a stress test and to use that document as the basis for the borrowing decision in addition to the market risk sensitivity test provided by the FHLB. This stress test should cover a reasonable range of contractual

⁴ There appears to be a great deal of confusion in the banking community concerning this point. The FHLB's policy in such situations is to make available FHLB replacement funding unless market events preclude the FHLB from raising funds in the money markets or the member bank is determined to be in precarious financial condition. In these cases, credit may be granted, but for a shorter term and may have enhanced collateral requirements. In general, it appears that the FHLB will exhaust all avenues before declining to honor an existing convertible borrowing contract. Special thanks to Carl Ritzel and his team, Chicago FHLB, for his help in clarifying FHLB lending policies.

triggers and external events, such as interest rate changes that may result in the exercise of embedded options or the bank's termination of the agreement.⁵

- The most successful liquidity risk management programs utilize dynamic, forward-looking risk measurement tools that provide the basis for planning. Thirty years ago, most community bankers used balance sheet ratios to determine funding levels. Even today, it is not uncommon to find banks managing their liquidity position by utilizing balance sheet based liquidity ratios. While ratios remain useful, they are static measures that should be supplemented with more dynamic measures that show the cash flow (gap) characteristics of the bank's on and off balance sheet activities. Many bankers resist using cash flow projections because they claim they are inaccurate even if rollover expectations are properly considered and claim that the results are no better than the old ratios. Almost invariably subpar performance is due to two common mistakes made in developing these reports: basing them on contractual maturities which fail to properly consider rollover expectations, and secondly, inadequate record keeping. Bankers make the assumption when developing their reports that every deposit is going to rollover and every loan is going to be repaid as agreed. Bankers need to stop using simple underlying assumptions to compile these reports and recognize that actual cash flows at all but the smallest banks are complex. Report effectiveness can be significantly improved by embodying both projections of customer behavior and true rollover expectations. Unfortunately, some depositors do not roll over their deposits and the cash inflows on some assets or liabilities such as principal payments on mortgages or payments on convertible obligations are irregular. These cash flows are frequently significant and should be estimated based on different interest rate scenarios. The second most common cause of inaccurate projections is inadequate record keeping. It is very difficult to develop accurate sources and uses projections when the banker has little or no knowledge of the bank's customer funding base. To be effective, more comprehensive deposit tracking systems must be developed and utilized. Bankers should consider either developing or purchasing a database that tells them what types of customers are using the different deposit products, the geographic diversification, and the effective funding spread on these products. They must develop and implement meaningful risk limits generated by each funding product. There are many relatively inexpensive computer based products out there that can quickly and easily deliver these types of information. A good place to start is by asking your correspondent bank what programs they see their other correspondents using.
- Risk limits are one of the most effective risk control tools available and have the added bonus of being the easiest to implement. Risk limits do not have to be sophisticated, but they should be comprehensive and more importantly, monitored. Community banks limit structures can range from a simple set of maximum maturity gap limits, maximum cash flow ratios, and maximum levels of short dated liabilities to more sophisticated limits such as maximum levels of unsecured funding, concentration limits broken out by customer, geographic location, and industry, cash flow coverage or maturity date coverage at larger shops. In general, the more the

⁵ SR 01 – 8, , Supervisory Guidance on Complex Wholesale Borrowings, April 5, 2001

bank uses price sensitive or credit sensitive funding products, the more comprehensive the limit structure should be and the more closely it should be monitored.

- Bankers must develop a “real” contingency funding plan. History is littered with examples of defunct banks that failed because they did not develop a meaningful contingency plan. Further, it has shown that banks having a sound contingency funding plan are far more likely to survive a funding crisis than those that do not. The key here is the fact that a sound contingency funding plan enables a bank to project liquidity under various crisis scenarios. Some points to consider in developing or assessing the bank’s current contingency funding plan:
 1. Many community bank’s funding plans revolve around correspondent Fed funds lines. While this may be a viable option, history has shown that there is an unfortunate tendency among some correspondents to pull the line at the first sign of trouble citing the material adverse clause found in nearly all Fed funds credit agreements. If drawing against correspondent Fed funds lines is part of the contingency funding plan, the banker should satisfy himself that this option is viable.
 2. A second point to be aware of is the inclusion of FHLB advances as a major funding source in the event of a funding crisis. Frequently bankers include the use of FHLB funding in their contingency plan only to find that previous borrowings have reduced availability to such nominal levels that FHLB borrowings are no longer a viable option. Keep in mind that if the liquidity crisis is due to the deterioration in the bank’s financial condition, the FHLB may be unwilling to either advance additional funding or even allow initial takedowns under its line. If the bank has a concentration of FHLB borrowings it is considered a best practice for the bank’s contingency funding plan to contain at least one scenario that covers the bank’s plan for replacing FHLB borrowings with alternative funding sources.
 3. Remember, a community bank’s contingency plan need not be elaborate to be viable. Many small community bank’s contingency funding plans are simple five line documents that simply say that in the event of a funding crisis, the bank will obtain its funding from the Discount Window. If this is the plan, the bank should ensure that it has current borrowing documentation on file with the Discount Window and either collateral in place or at least have collateral segregated for pledging.
 4. Knowing how third party funds providers will react in a liquidity crisis is extremely difficult to predict. Even large bank funding managers find it difficult to manage third party funding when the money markets are under stress. Most community bankers have little or no experience in dealing in such a stressful environment. While the contingency funding plan should ideally be developed based on a thorough analysis of historical data, in reality, constructing the plan

requires the use of assumptions. The key here is that the plan appears reasonable and viable.

Conclusion

The fundamental changes in the funding profile of community banks led by the erosion of the core deposit base coupled with the surge in loan demand has challenged community bankers as never before. The key to successful funds management is to know the risks inherent in each third party funding source and ensure that their use is appropriate for the bank's funding strategy. In his March 7, 2001 speech to the Independent Community Bankers of America, Federal Reserve Chairman Alan Greenspan told his audience that, "...the need for banking organizations to be flexible and adapt to the changes around them has continued to intensify. As the extraordinary economic performance of recent years has moderated, weaknesses that were once hidden have surfaced and have separated strong managers of risk from weak ones. Those that use their recent difficulties as a catalyst for improving their risk-management practices are likely to flourish." ⁶ While Chairman Greenspan was talking about risk management practices in general, those community bankers that heed his words by refining their liquidity risk management practices and understanding the risks associated with each funding product will adequately control liquidity risk and provide the funding base that will enable their community bank to continue to flourish.

⁶ Alan Greenspan, Remarks before the Independent Community Bankers of America, Las Vegas, Nevada, March 7, 2001.